reeling of the nearest houses as by an earthquake. Unhappily the ignorant country people, when the first fright passed, with mattocks and sticks smashed it and took away the pieces, so that Prof. Calderoni, who directly ran up from Cremona, could obtain only some little fragments for chemical analysis and for scientific cabinets.

A SCHEME is proposed for introducing electric lighting into the Canton of Vaud. The motive force would be derived from turbines of 5000 horse-power at Vallorbes, and the water supply being constant and abundant, it is believed that gas, which is very costly in Switzerland, may be entirely dispensed with throughout the district.

A VERY severe shock of earthquake was experienced in Cyprus on the morning of March 5, at 7.30, lasting about fifty or sixty seconds. At Limassol the houses swayed and rocked in the most appalling manner, and uncemented walls fell to the ground. It was impossible for foot passengers in the streets to keep their balance without assistance. The mules and horses staggered about as though in fits. It was altogether the severest shock which has been recorded for many years.

WE have received copies of the circulars just issued by the Local Scientific Societies Committee of the British Association to 324 societies, for the purpose of obtaining such information as will be useful in suggesting further action. Appended is a list of about 120 local societies which publish Proceedings.

THE Easter excursion of the Geologists' Association will be to Hythe, Romney Marsh, Sandgate, and Folkestone (March 26 and 27). On April 7 the Association will visit Westcombe Park, Greenwich; on April 14 the College of Surgeons; and on April 21 Berkhampstead and Boxmoor.

WE understand that a new weekly journal, devoted to the popular exposition of sanitary matters and to the education of the people in the laws of health, will be shortly issued by Messrs. Wyman and Sons, London. The new journal will be entitled *Health*.

THE former limits of the ice-sheet of the Glacial period appear to be still more and more extended by Russian geologists, in proportion as the post-Pliocene formations of Russia are better explored. We notice in a recent monograph on the Geology of the Volga, by M. Krotoff, that the author, who is well acquainted with this region, considers the glacial formations described by Prof. Miller in the southern parts of the province of Nijni-Novgorod, as due to the action of glaciers, and not of floating ice.

THE young Society for Caucasian History and Archæology, founded in 1881, has already published a first fascicule of its *Bulletin;* the second will soon follow. Prof. V. Miller has published his linguistic "Osetian Studies," containing in the appendix a paper on the religious beliefs of the Osets; and Prof. Patkanoff has published the first part of his "Materials for an Armenian Dictionary," as well as a pamphlet "On the Cuneiform Inscriptions of the Van system discovered in Russia."

THE Administration of Public Instruction of the Caucasus has conceived an excellent idea which cannot be too much recommended for other countries; it is to invite schoolmasters to write descriptions of their localities, and to collect local traditions, folk-lore, &c., and to publish the papers received in the shape of a special collection. It is easy to conceive, indeed, the amount of knowledge which might be gathered in this way, and the attraction which is thrown by a scientific pursuit into the wearisome life of a schoolmaster, who is lost in a small town or village, far from intellectual centres. When he knows that his work will not be lost, and when he is supplied from an intellectual centre with the scientific works he needs, he surely will find interest in his pursuit. This of course applies more to Russia than England. The two first parts of the collection thus started on the Caucasus wholly confirm these previsions; as is seen from an analysis of them published in the *Izvestia*, they contain, indeed, much valuable information. The descriptions of Erivan, Gori, Wakhichevan with its district, and of Chernolyesskoye village are spoken of as very useful work. Two papers, on the formation of Lake Paleostome, and a summary of all places where the Caucasus is mentioned by the ancients, are very elaborate; whilst a series of smaller papers and notes contains a variety of ethnographical sketches, folk-lore, and traditions.

LAMPART AND CO. of Augsburg are issuing in parts a third revised edition of Hellwald's "Kulturgeschichte in Ihrer Natürlichen Entwicklung bis zur Gegenwart." Trübner and Co. are the London publishers. The work will be completed in twenty parts.

AT the last meeting of the Meteorological Society of France, M. Moureaux, physicist to the Bureau Central, read a paper showing that the regimen of the rains south of the Central Plateau was independent of the meteorological conditions on the oceanic side. This communication is considered as an argument in favour of granting to the Bureau Météorologique of Algiers the privilege of being in direct communication with the other offices, and issuing warnings for the northern side of the Mediterranean.

THE additions to the Zoological Society's Gardens during the past week include a Common Seal (*Phoca vitulina*), British Seas, presented by Mr. William Whiteley; a Common Squirrel (*Sciurus vulgaris*), British, presented by Mrs. Campbell; two Prairie Grouse (*Tetrao cupido*) from North America, presented by Mr. Henry Nash; six Common Trout (*Salmo fario*), British fresh waters, presented by Mr. S. Wilson; two Common Seals (*Phoca vitulina*), British Seas, eight Prairie Grouse (*Tetrao cupido*) from North America, deposited; three Common Sheldrakes (*Tadorna vulpanser*), three Common Pintails (*Dafila acuta*), four Shovellers (*Spatula clypeata*), European, four Chilian Pintails (*Dafila spinicauda*) from Antarctic America, two Bahama Ducks (*Dafila bahamensis*) from South America, two Chiloe Wigeons ((*Mareca chiloensis*) from Chili, nine Summer Ducks (*Aix sponsa*) from North America, six Mandarin Ducks (*Aix galericulata*) from China, purchased; an Axis Deer (*Cervus axis* ♂), two Black Swans (*Cygnus atratus*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

THE OBSERVATORY AT MELBOURNE.—The seventeenth annual Report of the Board of Visitors of this establishment, together with the Report of the Government astronomer, Mr. Ellery, for the year ending June 30, 1882, has just been received. The meridian work with the transit-circle was for the most part limited to observations of standard stars, for the ordinary purposes of an observatory and the determination of places of stars used for positions of comets. The 8-inch equatorial had been arranged for the observation of the small planets *Victoria* and *Sappho*, during the last autumn, according to a programme agreed upon with several European and American, and other southern observatories, with the view to another determination of the solar parallax. The large reflector was employed on celestial photography, for sketching a number of Sir John Herschel's smaller nebulæ, for drawings of comet 1881, IV., &c. The nebula about η Argus was examined on three evenings, and was found to agree very closely with the drawing made in 1875. The majority of the smaller nebulæ were found to accord well with Herschel's descriptions. Nos. 57 and 1423, however, were much fainter than Herschel indicated, and Nos. 1655 and 2181 differed considerably from his description. The positions of these nebulæ for 1883·0 with Herschel's notes are as follows:—

	R.A. h. m. s.	N.P.D. ° ′
No. 57 ...	0 21 43	147 37·7
,, 1423 ...	6 25 6	121 12·3
,, 1655 ...	8 16 27	125 50·9
,, 2181 ...	10 37 27	125 45·0

No. 57.—Pretty bright, small, round, much brighter in the middle.

,, 1423.—Pretty bright; considerably large, round, very little gradually brighter in the middle; 4′.

,, 1655.—A double star = *h.* 4023 in a pretty small nebula, among some seventy stars.

,, 2181.—Pretty faint, small, much extended in o°± ; very suddenly, very much brighter in the middle; the first of three.

The photo-heliograph was used on every fine day possible, and 217 pictures were obtained in the year.

The necessary funds have been voted for a new transit-circle more in accordance with the modern requirements of astronomy, and its construction has been intrusted to Messrs. Troughton and Simms. Mr. Christie, the Astronomer-Royal, was invited to modify the specification sent to England, if he found reason to do so.

THE SUPPOSED VARIABLE μ DORADÛS—A SPURIOUS STAR.—Dr. B. A. Gould has made a very unexpected discovery, from which it appears that μ Doradûs of our catalogues, long supposed to be a variable star, was never observed by Lacaille in the position he assigns it in the Catalogue of the *Cœlum Australe Stelliferum*, and further, that by similar error, five other stars observed by Lacaille on the same day, which are found in the reduced catalogue published by the British Association, have no existence in the positions given. The case is a curious one, and as the *Cœlum Australe* of Lacaille is now a scarce work, we may be excused for transcribing the observations in question as they stand. They were made in Zone XI., 1751, December 16, *in parte inferiore* of Lacaille's rhomboid; the numerals are our own:—

	mag.	h. m. s.		mag.	h. m. s.
No. 1 ...	6 ...	4 17 38	No. 6 ...	6·7 ...	4 46 27
		24 2			53 34
,, 2 ...	7 ...	4 39 51	,, 7 ...	7 ...	4 51 5
		47 9			54 33
,, 3 ...	7 ...	4 25 23	,, 8 ...	5 ...	4 59 22
		31 0			5 8 28
,, 4 ...	6·7 ...	4 30 16	,, 9 ...	7 ...	6 5 53
		32 38			9 8
,, 5 ...	7 ...	4 41 33			
		43 41			

Lacaille appears to have entered correctly the times of beginning and ending of describing the chord of his rhomboid for Nos. 1 and 2, but instead of 4h. 25m. 23s. for the third star, the time was really 5h. 25m. 23s., and this error of 1h. runs on up to No. 8 inclusive; No. 9 is correct. This will be readily seen by inspecting the above times. The star entered in the Catalogue as μ Doradûs is No. 8, called 5m. in the observations but 6m. in the Catalogue, which gives its place for 1750·0, R.A. 76° 11′ 17″, Decl. −62° 7′ 4″. The place given by the B.A. reductions is R.A. 5h. 4m. 44·3s., N.P.D. 152° 6′ 57″, which is correctly deduced from the transits as printed. With the correction of +1h. to the times, the position for 1750 becomes R.A. 6h. 4m. 44·2s., N.P.D. 152° 6′ 49″, and the star "μ Doradûs" is seen to be identical with Brisbane 1172 = B.A.C. 2000 = Stone 2836, in Pictor. The other spurious stars introduced in the Catalogue by the error which Dr. Gould has brought to light are Nos. 1542, 1554, 1633, 1680, and 1706. The following identifications of the stars really observed may be useful:—

Spurious stars of the reduced Catalogue.		Stars really observed by Lacaille.
No. 1542 Reticulum	7m. =	Stone 2497, Dorado 7·6m.
,, 1554 ,,	6·7 =	,, 2532, ,, 6
,, 1633 Dorado	7 =	,, 2630, ,, 6·7
,, 1680 ,,	6·7 =	,, 2707, ,, 6.7
,, 1706 ,,	7 =	Brisb. 1109, Taylor V. 516
,, 1766 (μ Doradûs)	5 =	Stone 2836, Pictor 5m.

Brisbane observed a star close upon Lacaille's erroneous position of his μ Doradûs, and according to his general custom gave it Lacaille's magnitude. Moesta (*Astron. Nach.*, No. 1545) stated that he had observed this star at Santiago de Chile from February, 1860, to January, 1865, and had found it 8½ or 9 of Argelander's scale; he therefore considered it to be variable, and thought the period of variation would prove to be of long duration.

THE COMET OF 1812.—MM. Schulhof and Bossert's sweeping ephemerides for this comet are continued in No. 2489 of the *Astronomische Nachrichten*.

INSECTS VISITING FLOWERS

THE interest arising out of the writings of Darwin, Lubbock, and Hermann Müller relative to the part played by insects in their oft-recurring visits to flowers has of late years attracted much attention. The subject, in fact, has created a taste for observation, and an incentive has been given to watch the frequency of visits of various species to certain flowers, and especially to the insects' choice of colours of flower. While the mere registering of visits may seem a comparatively simple one, the reason why insects should show a preference to alight upon flowers of a certain colour, or choose certain species of plants, is a much more complicated problem than at first sight it would appear. Sir John Lubbock has shown by experiment that blue is the bees' favourite colour; H. Müller avers that in the Alps bees are attracted to the yellow rather than the white flowers. However this may be, certain it is that a much larger number of observations are yet needed before a positive law can be deduced. Two papers read at the last meeting of the Linnean Society (March 1): one by Mr. Alf. W. Bennett, "On the Constancy of Insects in their Visits to Flowers," and the other by Mr. R. M. Christy, "On the Methodic Habits of Insects when Visiting Flowers"—point out that a strict watch and ward is being kept on the movements of the busy bee and its kindred. Mr. Bennett states that butterflies show but little constancy in their visits, citing only a few instances to the contrary; but according to him, to some extent they seem to have a choice of colour. The Diptera exhibit greater constancy, though by no means absolute. The Apidæ, especially the hive-bee, manifest still greater constancy. From these data he infers that the ratio of increase is in proportion to the part performed by the insects in their carrying pollen from flower to flower. As respects preference for particular colours, in a series of observations Mr. Bennett has noted among the Lepidoptera that 70 visits were made to red or pink flowers, 5 to blue, 15 to yellow, and 5 to white; the Diptera paid 9 visits to red or pink, 8 to yellow, and 20 to white; Hymenoptera alighted 303 times on red and pink flowers, 126 on blue, 11 on yellow, and 17 on white flowers. Mr. Christy records in detail the movements of 76 insects, chiefly bees, when engaged in visiting 2400 flowers. He tabulates the same, and concludes therefrom that insects, notably the bees, decidedly and with intent confine their successive visits to the same species of flower. According to him, also, butterflies generally wander aimlessly in their flight: yet some species, including the Fritillaries, are fairly methodical in their habit. He believes that it is not by colour alone that insects are guided from one flower to another of the same species, and he suggests that the sense of smell may be brought into play. Bees, he avers, have but poor sight for long distances, but see well at short distances. Of 55 humble-bees watched, 26 visited blue flowers: of these 12 were methodic in their visits, 9 only irregularly so, and 5 not at all; 13 visited white flowers, whereof 5 were methodic and 8 the reverse; 11 visited yellow flowers, of which 5 were methodic and 6 not; 28 visited red flowers, 7 appearing methodic, 9 nearly so, while 12 were the contrary.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—In the last local examination 17 per cent. of those Juniors who sent up papers in Trigonometry obtained no marks, although some questions were of the very simplest nature. Among the Seniors Hydrostatics produced unsatisfactory answers. Many candidates had no ideas worth the name about pressure at a point, density, specific gravity, and weight. This is due partly to corresponding imperfections in some current text-books, and partly to the habit of teaching Hydrostatics apart from general physics or practical applications. The answers in Statics were the least satisfactory; yet according to the examiner there are few subjects in which good teaching tells more quickly than in elementary mechanics. Thus many who passed did very good papers.